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Editorial
Editorial Director: Ben Williams
Senior Graphic Designer: Allison Silverman
Veterinary Content Strategist: Katie Berlin, DVM
Technical Content Specialist: Ingrid Taylor, DVM
Accreditation Specialist: Aimee Potter, CVT
Cara Hopkins: AHA Community Manager

Advertising
National Sales Manager: Stephanie Pates
Advertising and Sales Manager: Sean Thomas
Advertising and Sponsorship Specialist: Jennifer Beierle

Trends magazine, American Animal Hospital Association
14142 Denver West Parkway, Suite 245, Lakewood, CO 80401
Phone: 800-883-6301 | Fax: 303-986-1700
Email: trends@aaha.org

Journal Highlights
Abstracts of the current issue of JAAHA, Journal of the American Animal Hospital Association, are reprinted with permission. For masthead information, editorial review board, authors’ guidelines, and subscription information, see the online publication at aaha.org or jaaha.org.

Subscriptions
Trends magazine is provided to AHA members as a member benefit (annual membership dues include $60 for a subscription). Annual nonmember subscriptions: $70. Single copies: $20. To subscribe, call 800-883-6301.

Postmaster
Trends magazine® (ISSN 1062-8266) is published 12 times per year (January, February, March, April, May, June, July, August, September, October, November, December) by the American Animal Hospital Association, at 14142 Denver West Parkway, Suite 245, Lakewood, CO 80401. Periodicals postage paid at Denver, Colorado, and at additional mailing offices. Canadian Post Agreement Number 40041253; send change-of-address information and blocks of undeliverable copies to P.O. Box 1051, Fort Erie, ON L2A 6C7. Printed in the USA. Postmaster: Send address changes to Trends magazine, 14142 Denver West Parkway, Suite 245, Lakewood, CO 80401.

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Cover image: Deja’nae Young, LVT is holding Ghost at Ralston Vet. Photo courtesy of Kasia Lloyd.

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An established solution for a rising problem
by Stephen Cital, RVT, SRA, RLAT, CVPP, VTS- LAM (Res. Anesthesia)
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WELCOME TO THE TRENDS TECHNICIAN ISSUE! This year, National Veterinary Technician Week is October 16-22, 2022. Don’t forget to put it on the calendar and do something special for your technicians. Perhaps even nominate one for the Trends Employee of the Month (trends.aaha.org/EOTM)! This year we set up a new online portal for submitting photos, and we received a record number of submissions for the now legendary Techs@Work photo contest.

In addition to the photo contest, our cover story is from the perspective of a veterinary social worker from one of our few accredited End-of-Life Care practices, Stack Veterinary Hospital in Syracuse, New York. The author talks about wellness challenges for technicians, which many of us know about, and also some strategies for dealing with these, based on personal experience at Stack.

For our second feature, we also look into the role of veterinary technician specialists (VTSs). What is a VTS, and what can they do? Is a VTS worth pursuing? All these questions and more are answered by Stephen Cital, RVT, SRA, RLAT, CVPP, VTS-LAM (Res. Anesthesia), who knows a thing or two about those credentials.

Have you subscribed to Central Line: The AAHA Podcast yet? This month in Trends, we feature an interview with Tasha McNerney, CVT, CVPP, VTS (Anesthesia and Analgesia), who has authored numerous articles on anesthesia and analgesia topics for veterinary professionals and pet owners.

THE AAHA COMMUNITY
The AAHA Community is full of lively discussions. Come and be a part of the new platform designed to connect AAHA members online. Members can try it out today at community.aaha.org. You can also access the AAHA Community on your mobile device as well. Just search for Tradewing in the Google Play Store or the App Store. Have a question about Trends? Just @ me and I will reply!

COMING NEXT MONTH
In November we will have articles on senior care, diabetes, and a perennial favorite, lasers! We’ll also dive into the subject of stress in the veterinary profession, and of course we’ll feature another Employee of the Month winner. (Don’t forget to enter!)

As always, let me know what you think at trends@aaha.org.

—Ben Williams, Editor
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What a Difference a Year Makes!

When I assumed the role as president last year, our world was just starting to recover from COVID and AAHA was changing the ways we help our practices. I am personally grateful that we are back to in-person interactions with our clients as they help strengthen our relationships to provide the best care for our patients. Many of our practices have not only survived but thrived with more change than we ever could have envisioned.

While you have been working hard in your practices to excel with change, our amazing board of directors and AAHA staff worked hard to drive new innovation to support our members. We are providing new ways to live up to our mission and vision of Simplifying the Journey toward Excellence for veterinary practices. Throughout the pandemic, we surveyed a portion of our members each month to learn about their needs and how AAHA could better serve them and our profession. We learned so much from you! This has converted to new support, programs, and opportunities for our members to continue to drive better medicine and healthier practices for our teams, patients, and communities. Because of your voice, the AAHA board of directors and leadership gained sound scientific data to guide our decisions and investment into our members, such as a new guidelines certificate program to help practices better utilize and implement them. We also partnered with a leading technology company to provide benchmarking data to our practices. Both of these new initiatives are just some of the ways we are working to help our hospitals and their teams while continuing to support ways for them to best treat their patients.

As I have transitioned out of my role as president, I cannot stress how important it is for us to work together to solve the challenges ahead and, importantly, not forget to celebrate what we have achieved these last few years. I couldn’t be prouder of the work that AAHA is doing and have so much gratitude for the work my own team has done this past year when I was out of the office serving AAHA. It is easy to lose our passion for veterinary care with all the challenges we have faced over the past few years. Take a moment to step back and reflect on all you and your team have accomplished. We are critically important to the communities we serve and the lives of the patients we all love. Our strength is our ability to heal and alleviate suffering while helping families build stronger bonds with their pets. I believe this is our narrative to remember and be proud of!

P. Adam Hechko, DVM, is AAHA’s immediate past president. He grew up in Columbia Station, Ohio, and went on to the University of Findlay to complete his undergraduate degree in pre-veterinary medicine. He is a proud graduate of The Ohio State University College of Veterinary Medicine and an avid Buckeye fan. He owns a seven-doctor veterinary practice just south of Cleveland, Ohio. His practice was named AAHA Practice of the Year among North American hospitals in 2015. Hechko has three children, Alexander, Benjamin, and Catherine. His wife, Dr. Jen, is a pediatric dentist.
This month in AAHA’s Publicity Toolbox . . .

Here are the downloadable social media images available for AAHA-accredited members at aaha.org/publicity this month:

- National Black Dog Day
  October 1
- World Animal Day
  October 4
- Pet Obesity Day
  October 12
- Veterinary Technician Week
  October 16-22
- Happy Halloween!
  October 31

Inside AAHA

HOT TOPIC:
Let’s Talk Technicians

AAHA Community question:
Technician credentialing, utilization, and empowerment is definitely a hot topic these days. How does your practice approach the technician title?

Responses from AAHA Community members:
Only our credentialed techs carry the title of technician..................64%
Job duties determine who is called a technician, not credentials......33%
We use the title of veterinary nurse .................................................. 3%

“My hospital does it by job duties, but I do feel it should be by credentialing. I worked hard for my CVT and would like to be recognized for it.”

“We have grandfathered in the title of technician for a couple assistants that have been in the field 10+ years with 5+ at a busy ER. We do distinguish those that are CVTs though.”

AAHA members, don’t miss out on Hot Topic Tuesdays, happening at community.aaha.org! Questions about your membership? Email aaha@aaha.org.
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VETMEDIN® (pimobendan)
Chewable Tablets
Cardiac drug for oral use in dogs only

Caution: Federal law restricts this drug to use by or on the order of a licensed veterinarian.

Description: Pimobendan (2-[4-(2H)-pyridazinone-3-yl]-5-[2-(4-methoxyphenyl)-1H-benzimidazole-5-yl]-3Hpyridinone) is supplied as oblong half-scored chewable tablets containing 1.25, 2.5, or 5 mg pimobendan per tablet. Pimobendan is a benzimidazole-pyridazinone derivative, is a non-sympathomimetic, non-glycoside inotropic agent.

Pimobendan exerts a modestly inotropic effect by a dual mechanism of action consisting of an increase in calcium sensitivity of cardiac myofilaments and inhibition of phosphodiesterase III activity by inhibiting phosphodiesterase III activity. The chemical name is 2-[4-(2H)-pyridazinone-3-yl]-5-[2-(4-methoxyphenyl)-1H-benzimidazole-5-yl]-3H-pyridinone. The structural formula of pimobendan is shown on page 13.

Adverse reactions/new clinical findings were seen in both treatment groups and were potentially related to CHF, the therapy of CHF, or both. The following adverse reactions/new clinical findings (including adverse reactions that were listed according to body system and are not in order of frequency) were seen in dogs taking pimobendan (total number of affected dogs in parenthesis): coughing, pleural effusion, and increased respiratory rate (14, 13, and 18 respectively). Other adverse reactions/new clinical findings that were not related to CHF, the therapy of CHF, or both. Beagle dogs treated with pimobendan for 14 days had transient changes in serum hepatic enzyme levels, and mild increases in serum hepatic enzyme levels, and mild decreased platelet counts.

Table 2: Effectiveness Results for the 56-Day Field Study

<table>
<thead>
<tr>
<th>Group</th>
<th>Active Control Group</th>
<th>Active Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>Day 29</td>
<td>Day 29</td>
</tr>
<tr>
<td>VETMEDIN</td>
<td>80.7% (n=134)</td>
<td>76.3% (n=150)</td>
</tr>
<tr>
<td>AVVI</td>
<td>88 of 101 dogs with AVVI</td>
<td>77 of 100 dogs with AVVI</td>
</tr>
<tr>
<td>Beagle group</td>
<td>13 of 28 dogs with DC</td>
<td>17 of 25 dogs with DC</td>
</tr>
</tbody>
</table>

Safety: In a laboratory study, VETMEDIN chewable tablets were evaluated in 20 adult Beagle dogs per treatment group at 0 (control), 1, and 2 mg pimobendan/kg, orally for 14 days. Three samples were collected for each treatment group for cardiac pathology. The cardiac pathology/histopathology noted in the 2X pimobendan group included greater percent of positive and vasculotropic drug toxicity in normal dog heart, but no evidence of positive inotropic and vasculotropic drug toxicity in normal dog heart, but no evidence of positive inotropic and vasculotropic drug toxicity. No evidence of positive inotropic and vasculotropic drug toxicity were observed in normal dog heart, but no evidence of positive inotropic and vasculotropic drug toxicity were observed.

Table 3: Incidence of Cardiac Pathology/Histopathology in the Six-Month Safety Study

Severe left ventricular hypertrophy
Three 3X dogs
Moderate to marked myocytolysis
Three 3X dogs
Myocardial thinning of the chordae tendineae
One 3X and one 5X dog
Endocardial thickening of the left ventricular outflow tract
One 3X, two 3X, and five 5X dogs

Most of the gross and histopathologic findings occurred in these three dogs. Murmurs of mitral valve insufficiency were detected in one 3X dog, one 5X dog, and one 3X and one 163). These murmurs (grades II-III of VI) were not associated with clinical signs of heart failure.

In 24-hour Holter monitoring, mean heart rate was increased in the 5X group (101 beats/min) compared to the control group (94 beats/min). Not counting escape beats, the 3X and 5X groups had slightly higher numbers of isolated ventricular ectopic complexes (VEs). The maximum number of non-escape VEs recorded either at baseline or in a control group dog was 4 VEs/24 hours. At each week 4 or week 20, three 3X group dogs had maxima of 33, 13, and 10 VEs/24 hours, and two 5X group dogs had maxima of 22 and 9 VEs/24 hours. One 3X group dog with no VEs at baseline had 6 VEs/24 hours at Week 4 and again at Week 20. Second-degree atrioventricular heart block was recorded in one 3X group dog at Weeks 4 and 20, and in one 5X group dog at Week 20. None of the dogs had clinical signs associated with these rhythm disturbances.

VETMEDIN® (pimobendan) Chewable Tablets

Animal Safety: In a laboratory study, VETMEDIN chewable tablets were evaluated in 20 adult Beagle dogs per treatment group at 0 (control), 1, 2, and 5 mg pimobendan/kg, orally for 14 days. Three samples were collected for each treatment group for cardiac pathology. The cardiac pathology/histopathology noted in the 5X group included greater percent of positive inotropic and vasculotropic drug toxicity in normal dog heart, but no evidence of positive inotropic and vasculotropic drug toxicity were observed.

Storage Information: Store at 20°C to 25°C (68°F to 77°F), excursions permitted between 15°C and 30°C (59°F and 86°F).

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VETMEDIN® (pimobendan) Chewable Tablets:

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Studies show using VETMEDIN from the start gives dogs with CHF the opportunity for better days and longer lives.\(^5\)

**IMPORTANT SAFETY INFORMATION:** VETMEDIN is for use in dogs with clinical evidence of heart failure only. The most common side effects reported in field studies were poor appetite, lethargy, diarrhea, dyspnea, azotemia, weakness, and ataxia. VETMEDIN should not be given in case of hypertrophic cardiomyopathy, aortic stenosis, or any other clinical condition where an augmentation of cardiac output is inappropriate for functional or anatomical reasons. For more information, please see full prescribing information.

References:
3 The number of dogs treated with VETMEDIN in the US is estimated by IDEXX Laboratories, Inc. based on transaction data from a representative sample of US veterinary practices. Data on file at IDEXX Laboratories, Inc. Westbrook, Maine USA.

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**AKC Celebrates Its 200th Recognized Breed**

The American Kennel Club (AKC), the world’s largest purebred dog registry, has announced that the Bracco Italiano has received full recognition and is the AKC’s 200th breed.

“We at the AKC are thrilled to welcome our 200th breed to the registry,” said Gina DiNardo, AKC Executive Secretary. “The Bracco Italiano is a strong, active, and sturdy breed of dog that would make a great companion for active families. The breed loves people and would be best suited for a family that can give it the love and attention it needs.”

One of two native gun dogs from Italy, the Bracco Italiano’s history reaches back to the fourth or fifth century. A hunter, pointer, and retriever, the Bracco Italiano is powerful and needs daily exercise. These dogs thrive on human companionship and are loyal, affectionate, and playful. They are known to be sensitive and gentle-natured and become close friends with children.

AKC Recognition offers the breed the opportunity to compete at all levels of the 22,000 AKC sports and events held each year.

To become an AKC-recognized breed, there must be an active following and interest in the breed by owners in the US and an established breed club of responsible owners and breeders. There also must be a sufficient population of dogs in the United States geographically distributed throughout the country.

**Cats Injured in Wildfires at Risk of Deadly Blood Clots**

Cats who suffered burns and smoke inhalation in urban California wildfires are at risk of forming deadly blood clots, according to a new study from researchers at the University of California, Davis, Veterinary Medical Teaching Hospital. The study, recently published in the journal *Frontiers in Veterinary Science*, follows up on a previous discovery that showed cats injured in urban wildfires had a high incidence of heart problems.

“Prior to these two papers, we didn’t realize that cats impacted by urban wildfires were prone to forming clots, which can lead to sudden death,” said lead coauthor Ronald Li, DVM, PhD, associate professor of small animal emergency and critical care at UC Davis. “This study will change the standard of care for rescued cats from these wildfires and hopefully save more lives.”
Husky Puppy Saved from Accidental Overdose by Hemoperfusion

A 10-month-old husky, Pumba, is alive today thanks to the lifesaving hemoperfusion treatment he received at Tufts’ Cummings School of Veterinary Medicine’s Foster Hospital for Small Animals. Troy Watkins of the Cummings School News Center reported this story.

When Pumba accidentally ate a bottle of 200-mg Ibuprofen pills (possibly 200 of them), his owner, Ryan Steeves-Kilgallon, immediately rushed him to Tufts VETS (Veterinary Emergency and Treatment Services). He then brought Pumba to Foster Hospital for a special type of dialysis treatment.

Tufts VETS alerted Foster Hospital about Pumba, so staff there had time to prepare. “The minute he arrived, we put a catheter in and started treatment,” said Emmanuelle Butty, DVM, DACVIM (SAIM), Clinical Fellow in Nephrology/Urology and a veterinary internist at Foster Hospital.

“Pumba had consumed a fatal dosage of pills. He was stuporous and starting to lose his gag reflex,” said Lauren Carvalho, DVM, a senior resident in Internal Medicine who was primarily involved with Pumba’s treatment.

Veterinary Technician Carolyn Tai oversees Cummings School’s dialysis center and started Pumba on a hemoperfusion treatment.

“Hemoperfusion is a new dialysis modality we offer, which uses carbon filters or a synthetic resin that quickly allows the processing of blood through these filters to remove toxins,” explained Mary Labato, DVM, DACVIM, a veterinary internist at Foster Hospital. “Ibuprofen toxicity is one of our most frequent treatments. Dogs think they are M&Ms and they will eat entire bottles of them.”

Once the hemoperfusion treatment began, Pumba steadily recovered. Labato described the timeline. “Twenty minutes into the session, his gag reflex returned, and he was lifting his head. At 40 minutes, he was sitting up and eating treats. After the 80-minute session Pumba was taken off the machine and he walked out to say hi to his owner. We saved his life with this treatment.”
Kansas State University Celebrates Graduates of the US-China Joint Doctor of Veterinary Medicine Program

“The goal of the US-China Joint Doctor of Veterinary Medicine Program is to train the trainers of Chinese veterinary medicine,” said Jishu Shi, professor and director of the US-China Center for Animal Health in the College of Veterinary Medicine at Kansas State University.

For Kansas State University’s 2022 annual celebration of the program, graduates from the four other participating US colleges of veterinary medicine were invited to bring a friend. The pairs then shared their thoughts on the value of friendship during the challenges of completing a Doctor of Veterinary Medicine degree.

“When talking about the impact of classmates on me, I have always been amazed by how intelligent, mentally mature, and hard-working they are,” said Weihan Wang, who graduated with a Doctor of Veterinary Medicine in May. “They have always been supporting me and helping me do my fourth-year class rotations. Helping and supporting each other makes our lives much easier.”

Wang’s classmate and fellow graduate Ron Orchard said, “K-State is a pretty amazing place that has opened up the world to me. . . . I hope this leads to further projects that Weihan and I can perform together in China, and I think this program provides us a blueprint on how we can accomplish that.”

Basepaws Launches New Genomic Screening Tools

Basepaws Inc., a Zoetis company and pioneer in pet care genetics, has launched a comprehensive portfolio of genetic and oral microbiome screening tools exclusively for veterinary professionals. Veterinary genetic and oral microbiome tests give veterinary teams actionable screening tools to help identify health risks sooner and provide better health outcomes for all cats and dogs.

These veterinary genetic tests screen for 64 feline health markers and over 210 canine health markers associated with known genetic diseases. The veterinary oral microbiome tests analyze more than 600 relevant oral microbes to assess risk for the most common feline dental disease. The information can guide veterinarians and pet owners in selecting annual wellness programs, routine diagnostic tests, and lifestyle changes based on an individual pet’s genetics.

“Pet genetics is ushering in an era of truly personalized and proactive medicine,” said Ernie Ward, DVM, Basepaws Veterinary Medical Lead. “Knowing a pet’s genetic risk factors and oral microbiome can help eliminate many clinical blind spots and allow veterinarians to recommend targeted diagnostic monitoring and lifestyle interventions based on scientific evidence instead of generic, species-, or breed-specific advice.”
Study Finds New Links Between Dogs’ Sense of Smell and Vision

Cornell researchers have documented the integration of dogs’ sense of smell with their vision, a step forward in understanding how dogs learn about and adapt to their surroundings.

“We’ve never seen this connection between the nose and the occipital lobe, functionally the visual cortex in dogs, in any species,” said Pip Johnson, BVSc, CertVDI, DECVDI, MSc, MRCVS, assistant professor in the Department of Clinical Sciences in the College of Veterinary Medicine and senior author of “Extensive Connections of the Canine Olfactory Pathway Revealed by Tractography and Dissection,” published July 11 in the *Journal of Neuroscience*.

“It makes a ton of sense in dogs,” she said. “When we walk into a room, we primarily use our vision to work out where the door is, who’s in the room, where the table is. Whereas in dogs, this study shows that olfaction is really integrated with vision in terms of how they learn about their environment and orient themselves in it.”

Reporting on this discovery in the *Cornell Chronicle*, Caitlyn Hayes described the technology behind it. “Johnson and her team performed MRI scans on 23 healthy dogs and used diffusion tensor imaging, an advanced neuroimaging technique, to locate the dog brain’s white matter pathways, the information highways of the brain.”

They found some connections similar to those in humans as well as “never-documented” connections between the olfactory bulb and the spinal cord and the occipital lobe.

Johnson said the research corroborates her clinical experiences with blind dogs. “They can still play fetch and navigate their surroundings much better than humans with the same condition,” Johnson said. “Knowing there’s that information freeway going between those two areas [in their brains] could be hugely comforting to owners of dogs with incurable eye diseases.”

AAVMC on the US Veterinary Workforce: “Significant Shortages of Veterinarians”

In July 2022 the American Association of Veterinary Medical Colleges (AAVMC) released its “Statement on U.S. Veterinary Workforce,” a call to action to address “significant shortages of veterinarians . . . across all sectors of professional activity and at all levels of specialization.” The reason for the shortages is described as “a result of systemic, long-term trends in pet ownership and demand for veterinary services, along with limited capacity for training veterinary professionals, and are expected to continue unless the veterinary medical profession takes action.”

The AAVMC Statement assesses the implications of the shortage: “Because of the current veterinary workforce shortage, veterinary healthcare teams are feeling overworked and overwhelmed—burnout is high. But there are also broader societal impacts.”

These include:

- Jeopardizing animal welfare for millions of pets and other animals.
- Restricting access to veterinary care for underserved pet owners.
- Putting our food systems and food security at risk because “veterinarians are our first line of defense for biosecurity, emergency preparedness, and response.”

QUOTE OF THE MONTH

“Some people talk to animals. Not many listen though. That’s the problem.” —A.A. Milne
The Veterinary Virtual Care Association Releases Model Telemedicine Regulations

The Veterinary Virtual Care Association (VVCA), a global nonprofit association dedicated to developing best practices for delivering virtual care for animals, released the industry's first Model Telemedicine Regulations during the 2022 American Veterinary Medicine Association's annual conference in Philadelphia.

The model regulations address the growing demand for guidance surrounding the veterinary-client-patient relationship when providing telemedicine services. They provide support and direction for practitioners, associations, legislatures, and state boards of veterinary medicine, all of which play a role in safeguarding real-world standards of practice.

“These model regulations . . . will spark conversations across the profession, which are needed,” said Mark Cushing, founding member of the VVCA and CEO of Animal Policy Group. “The VVCA will conduct reviews to update model regulations based upon field experiences and comments from individual practitioners, as well as others in the profession.”


For more information on the VVCA, visit www.vvca.org.

Vetoquinol Offers On-Site Training Program in Rehabilitation Service

Vetoquinol USA has announced the launch of a new program to help veterinary clinics jump-start rehabilitation services. The VeRBS (Vetoquinol Rehabilitation Business Solution) program offers a two-day, on-site course with lectures, hands-on labs, and business planning services for up to 10 clinic staff members. Upon completion, the clinic will be prepared to launch rehabilitation services for dogs and cats immediately, including basic equipment.

“Just like people, dogs can benefit from programs that help improve fitness and overall mobility,” said Heidi Rooney, MBA, Business Solutions Development Manager, Vetoquinol USA. “With the VeRBS program, clinics can make staff training and equipment selection nearly turnkey. After a two-day training session, clinics will have the fundamentals to help patients regain strength, mobility, and comfort to become active family members again.”

The VeRBS program offers:
- On-site, personalized courses led by qualified instructors
- Hands-on labs
- Measurement methodologies
- Therapeutic techniques
- Business planning guides and treatment evaluation templates
- Marketing materials
- Instruction for using a variety of rehabilitation equipment

The courses are led by Beth Frank, DVM, MS. Frank is a Certified Canine Rehabilitation Therapist and is also certified in veterinary medical acupuncture. During the in-person course, participants will receive training in rehabilitation of the forelimb, hindlimb, geriatric patient, neurologic patient, and feline patient. The program provides 14 hours of continuing education credits per participant with a maximum of 10 staff members.
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Wellness for Today’s Veterinary Technicians
Challenges Abound, but Wellness Remains a Priority

by Sally Jo Vanostrand, MSW

VETERINARY TECHNICIANS ARE THE BACKBONE OF MOST VETERINARY PRACTICES. With growing attention to the general wellness of professionals within the veterinary field, technicians remain a group that requires evolving wellness techniques and advocacy. Technicians have daily expectations of adaptability, resourcefulness, skill, and versatility. Stress, anxiety, compassion fatigue, and burnout are familiar hurdles within the technician field. Technicians are irreplaceable within a veterinary practice, but what can we do to support the wellness of technicians?

Reflecting on a technician’s day would reveal a fast-paced environment with a large patient load. In my experience, most technicians have passion and fulfillment for their work. However, resources for these technicians to properly work through the mental and physical toll their profession takes on them seem to be lacking.

I like to think of technicians’ wellness as the glue that maintains the homeostasis of a veterinary practice. Technicians handle everything from anesthesia to client education, nail trims, dispensing medications, and countless other responsibilities. Assessing and enhancing the outlets and resources for technicians to be as fulfilled as possible in their position is necessary to enable them to function in a way that benefits themselves and the practice.

Mental Health Challenges
Suicide is a delicate topic and difficult to address without proper training. There is widespread data that proves that suicide is an increased risk for personnel within veterinary practices. The US Centers for Disease Control and Prevention reported in 2019 that there is an increased likelihood of suicide among technicians when compared with the general population. This daunting statistic makes the importance of technician wellness more crucial than ever. A preliminary suggestion in addressing this concern is to train staff members to recognize and help a colleague that is expressing suicidal
ideation. Having staff educated on the warning signs and how to find an at-risk individual proper help is a resource every veterinary practice should provide. Suicide prevention training is available through Question, Persuade, Refer (QPR) Gatekeeper certification.

Conflict is common in several workplaces, and veterinary practices are not exempt from this discomfort. Having professionals available to help reduce the negative feelings associated with conflict can create a workplace that feels safe and empathetic to those employed there. Ignoring conflict can create further animosity between those directly involved and the management team that may have made a mistake in ignoring the conflict. Quickly addressing conflict shows technicians and other staff members that their concerns are significant and that actions are in motion to rectify the situation.

Mental health services should be easily accessible to technicians. Given the negative stigma and barriers to mental health services, we should consider that it is challenging to admit that one may need mental health services; it may also be difficult for a technician to access the services when needed. Providing free mental health services for the staff at veterinary hospitals is becoming increasingly common.

It is ideal for veterinary practices to either have a qualified mental health provider on staff or hire an outside mental health provider to come in a couple of times a month and see the technicians that would like to access these services. On-site employer-provided mental health services diminish the hurdles of the cost of mental health services for the technician. Employers will see the benefits for their technicians and other staff members quickly in the positive outcomes for the technician and the workplace environment.

Helping and Healing
Technicians are, by nature, helpers and feel fulfilled in helping pets and clients. This helping nature can be further nourished by providing opportunities outside of veterinary practice. Community projects allow for the chance to use helping skills in a way that is outside their daily tasks as a technician, and doing positive work for the community has its benefits. I have organized events where the staff will make and serve lunch to the local homeless community, pet food drives for a local pet food pantry, and other unique opportunities to help those in need. This type of community service allows technicians to nurture their helping nature further.

Technicians can see a patient just as often as a veterinarian and sometimes even more. Veterinary practices must have appropriate supports to allow technicians the space and time to decompress after tough cases. Prolonged exposure to a specific patient creates a bond and further promotes emotion from the technician when the case doesn’t go as planned or the pet’s quality of life is in jeopardy. Debriefing after a tough case or negative client interaction creates an open forum to discuss the complex emotions surrounding the case.

When these moments arise, debriefing with a technician should allow them an outlet to express their feelings revolving around the patient. Positive feedback is required to assure the technician that they are justified in feeling the way they do. Occasionally, a technician may need quiet time after a challenging case. When this occurs, it is vital that they have time by themselves and that someone follows up with them to ensure that the time off the floor has helped them work through this current difficulty.

Adding stress-reducing activities to their daily routines inside the hospital, like adult coloring books, crafting opportunities, and seasonal activities such as pumpkin painting, can also add incentive to use the wellness room.
A wellness room is a valuable addition to any veterinary practice. All too often, technicians can be overwhelmed by the fast-paced environment of veterinary medicine. A wellness room allows technicians and other employees to escape into a safe place if they feel overwhelmed. Thoughtful planning goes into creating a wellness room, which technicians and additional staff notice as a consideration for their overall wellbeing. I feel as though every excellent wellness room starts with a conversation with personnel about what would be beneficial to them in the wellness room.

Taking the top suggestions and adding them to the room gives it a personal feel and directly addresses the most common needs found within the veterinary practice. Valuable items to include in a wellness room are water fixtures, spa music, a massage chair, a Zen garden, and sensory items. Adding stress-reducing activities to their daily routines inside the hospital, like adult coloring books, crafting opportunities, and seasonal activities such as pumpkin painting, can also add incentive to use the wellness room.

**Take Time for Education**

Technicians have minimal downtime, but there are ways to discuss and educate them on mental wellness. Staff meetings, newsletters, and Facebook wellness pages are a great way to get information to them on wellness topics. Giving technicians multiple opportunities to learn coping skills, grounding techniques, self-awareness, and so on increases the likelihood of using and retaining the information provided. Acknowledging the technicians who are trying these techniques through recognition will encourage them to continue practicing these skills and boost their colleagues to do the same. Guest speakers are also a great idea, especially if you can find a provider specializing in a specific skill that would benefit the staff.

Stress within the veterinary field is inevitable, so careful consideration should be given to retaining the technicians within our practices. Demand for technicians has increased with the need for veterinary care through the pandemic. Concerns such as pay, benefits, and workload may explain why a technician may leave one practice for another, but it doesn't necessarily speak for those that leave veterinary medicine altogether.

Mental health services could also make one practice stand out compared with other practices that may not have the same perk. Investing in physical and mental health supports will help diminish turnover due to the demands of our field. Addressing technicians' wellbeing creates a safety net for those battling compassion fatigue or burnout.

Technicians do heroic work every day, and while this is rewarding, we should pay special attention to how we can support technicians in today's veterinary world. Understanding the causes of pressure, conflict, compassion fatigue, and burnout within an individual practice opens the doors to selecting the most valuable resources to further support technicians in their careers. Starting the conversation with the technicians in your hospital about what opportunities they would appreciate ensures their overall wellbeing and is the start of a happier and more fulfilled technician team.

Sally Jo VanOstrand, MSW, began her career in the veterinary field at Stack Veterinary Hospital in 2004. Sally graduated magna cum laude from Syracuse University, achieving her master’s degree in social work. Coupling her degree with her certification in animal hospice and palliative care, Sally offers services for people that are experiencing grief because of a pet loss or stress associated with the obstacles of an aging pet. In addition to pet loss, Sally also addresses wellness of employees within veterinary practices. Diminishing barriers to wellbeing within veterinary practices, advocating for wellness of veterinary professionals, and providing direct care to employees in need is a passion that she works diligently toward.
The winner of this year’s Techs@Work photo contest is a photo of Nicholas Lynum, of Plymouth Veterinary Hospital in Plymouth, Michigan, taking the heart rate of an adorable patient, Maui. Lynum, who is working toward his LVT credentials, wins an exclusive AAHA swag bag for his practice, and bragging rights for the entire year! A close second was the photo on page 29 of Jessica Maylen, CVT, taking blood pressure on a patient. Maylen’s practice will also receive a special prize. Congratulations to all!

Photo courtesy of Nicholas Lynum, Plymouth Veterinary Hospital, Plymouth, Michigan

GRAND PRIZE WINNER
VETERINARY TECHNICIANS ARE A CRITICAL PART OF EVERY VETERINARY PRACTICE. While we should celebrate our technicians every month, consider making this month extra special for them!

As we continue to have high demand for credentialed technicians and applications for open positions remain low, have you considered how to better utilize the technicians that currently work in your office? When we allow technicians to fully apply their skills, we can increase patient care, improve the client experience, and allow doctors to spend more time with patients. Taking a step back to analyze how these incredible team members in our profession operate in your practice can lead to some opportunities to celebrate their skills, reduce burden on doctors, improve job satisfaction, and drive exceptional patient care.

The high demand for credentialed technicians in our practices is compounded by the number that are leaving our profession after only a short time. According to reports, there are many reasons for technicians leaving the veterinary profession. These reasons include lack of respect from the public and veterinary professionals, frustration from lack of utilization of their skills, burnout, and compassion fatigue. As a profession, I think we can do much better for our teams and technicians to help prevent their hard work and education from being undervalued.

The team at AAHA and board of directors continue to work on living up to our mission of simplifying the journey toward excellence for veterinary practices by developing solutions to support the challenges we face daily. The topic and impact of veterinary technician utilization has become so important to our profession that AAHA will be developing the first guidelines on veterinary technician utilization. The task force will start working on this topic this fall.

We have learned how creativity and looking through a different lens has created new opportunities on how
we deliver care to pets. This same approach can lead to increased use of the knowledge and technical skills of credentialed technicians. Restructuring support for credentialed veterinary technicians with workflow changes, the utilization of assistants, support through employee assistance programs, and opportunities for personal and profession growth can have significant impacts on our practices. These changes can greatly improve job satisfaction and efficiency throughout the hospital by allowing technicians to fully utilize the skills they possess. As a result, more patients can be helped by our teams. As veterinarians, we can use the additional time to focus on diagnosing a pet and bonding with the clients.

Please consider what opportunities our patients and profession are missing when we do not fully utilize the skills of credentialed veterinary technicians. The next time a patient enters the hospital, consider what can be delegated to your team. When patient outcomes are successful, remember that your team was instrumental in that success. When clients praise the care their pet received, take a moment to let them know that it was possible because of the skilled, credentialed professionals in your office.

As we celebrate veterinary technicians in the issue, I can’t say thank you enough for their hard work and dedication to each pet and family they help in our practices. I would not be able to operate my hospital without the help of these talented individuals. Thank you for all you do each and every day. ✷

P. Adam Hechko, DVM, is AAHA’s immediate past president. He grew up in Columbia Station, Ohio, and went on to the University of Findlay to complete his undergraduate degree in pre-veterinary medicine. He is a proud graduate of The Ohio State University College of Veterinary Medicine and an avid Buckeye fan. He owns a seven-doctor veterinary practice just south of Cleveland Ohio. His practice was named AAHA Practice of the Year among North American hospitals in 2015. Hechko has three children, Alexander, Benjamin, and Catherine. His wife, Dr. Jen, is a pediatric dentist.
1 Brenda Hinderliter, CVT, providing positive distraction to a patient while Russell Brewer, DVM, conducts an exam at Care Animal Hospital of Pleasant Prairie in Pleasant Prairie, Wisconsin. Photo by William Vargas, Marketing Manager.

2 Corrine Mayo, LVT, is holding Fefe for her acupuncture treatment at Ralston Vet in Ralston, Nebraska. Photo by Kasia Lloyd.

3 Bree McMillan, LVT, performs a dental prophylaxis at Ralston Vet in Ralston, Nebraska. Photo by Kasia Lloyd.

4 Kathrine Coronado, LVT, VTS (Ophthalmology) measures the intraocular pressure of a black vulture while Emily Silva, LVT restrains the patient at Eye Care for Animals. Photo courtesy of Kathrine Coronado.

5 Barbara L. Schick, CVT, RVT, LVT, performs an ear flush on a patient under anesthesia at Fur Kids Allergy & Dermatology in Pensacola, Florida. Photo courtesy of Fur Kids Allergy & Dermatology.

6 Imeldo Laurel, LVT, VTS (Dentistry), performs a dental procedure at Dog and Cat Hospital in Norfolk, Virginia. Photo by Peter Gerlach.
Veterinary Assistant Kristina Carter expresses “Ruthie’s” anal glands while veterinary assistant Allynne Montilla keeps her happy and distracted with peanut butter and Julie Pattaphongse, RVT, uses gentle restraint at Animal Care Clinic in San Luis Obispo, California. Photo by Natalie Borgardt.

Alyson Evans RVT, CVT, Elite FFCP, CVBL (right), Debbie Vanucci, CVT, Elite FFCP (left), and RJ, CVA, FFCP, conduct a Fear Free blood draw on a puppy at Briargate Boulevard Animal Hospital in Colorado Springs, Colorado. Photo by Dawn Brizendine, DVM.

Mary Ouzts, LVT, bottle feeding a baby goat at Madison Animal Care Hospital in Madison, Alabama. Photo by Page Magee.
Veterinary assistants Kryss Jones (background) and Lauren Woodmansee comfort patients at Roanoke Animal Hospital in Roanoke, Virginia. We do a lot of sitting on the floor with our patients. Whatever it takes to help them feel more safe and secure! Photo by Liz Bird.

Jessie Rayburn, CVT (head technician), giving oxygen to a basset puppy (“Puddles”) suffering from pneumonia—he was exhausted from trying so hard to breathe at Pine Creek Animal Hospital in Gap, Pennsylvania. Photo by Lois Lantz.

Haileigh Lewis, veterinary assistant (blue scrubs), and Eryn Tison, CVT (brown scrubs), work with a dog at 1st Pet Veterinary Centers in Arizona. The technicians were prepping for the doctor to use the endoscope to remove a piece of rawhide the dog had choked on. The procedure was successful and the dog is doing great. Photo by Debe Jorgensen/1st Pet Veterinary Centers.

Andrea Bobe, LVT, placing an NG tube on a feline patient at Veterinary Emergency Group-Upper East Side in New York City. Photo by Amanda Gerard, LVT, Veterinary nursing development coordinator.
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Veterinary Technician Specialists

An Established Solution for a Rising Problem

by Stephen Cital, RVT, SRA, RLAT, CVPP, VTS- LAM (Res. Anesthesia)

IN HUMAN NURSING, THERE ARE EXTRA QUALIFICATIONS a registered nurse (RN) can attain to become what is known as an advanced practice registered nurse (APRN). Standard titles for such practitioners include nurse practitioners (NPs), clinical nurse specialists (CNSs), and certified registered nurse anesthetists (CRNAs), to name a few. The APRNs fill many gaps in human healthcare, given the lack of MDs (physicians), and have more autonomy than their nonspecialized colleagues. In veterinary medicine, though, we are not quite there yet. Or are we?

Before I delve into the secret weapon veterinary medicine has but is not fully utilizing, we need to take a step back and look at one of the linchpins of the veterinary profession: credentialed veterinary technicians. Credentialed veterinary technicians are individuals who have graduated from an American Veterinary Medical Association (AVMA)-accredited veterinary technology program, or who used an alternate route to qualify to sit for the veterinary technicians national exam (VTNE).

The VTNE is administered by the American Association of Veterinary State Boards and is North America’s most widely accepted veterinary technician credentialing exam. Unfortunately, veterinary technicians crossing state lines are still faced with state-by-state credential requirements where credentials do not always transfer.

Many states still do not require credentialing for team members to perform specific skills in the veterinary
Credentialed veterinary technicians can specialize in one of the below disciplines. Some academies offer even more focused specialization in a particular discipline or species, an option also offered by specialty colleges for veterinarians.

Source: navta.net/veterinary-technician-specialties/list-of-approved-academies
practice, as delegated by the veterinarian. Any noncredentialed or nonlicensed person in a veterinary practice is properly and legally called a veterinary assistant. Veterinary assistants are an enormously important part of the veterinary team. Some states have adopted more formalized education and training for veterinary assistants and offer training via approved veterinary assistant courses; these graduates earn the title certified veterinary assistant (CVA).

A growing number of state veterinary practice acts (VPAs) include credentialed veterinary technicians with varying titles, such as certified veterinary technician (CVT), licensed veterinary technician (LVT), registered veterinary technician (RVT), and licensed veterinary medical technician (LVMT). Our Canadian neighbors have adopted the title of RVT across all provinces.

No US state legally recognizes or endorses the title “veterinary nurse” or any variation of a title that includes “nurse” thus far, despite many legislative efforts to enact that change over the last five years. The American Nurses Association has vowed to defend their legally protected title nationally, including filing a letter of complaint with the Federal Trade Commission against organizations using the term “nurse” both with or without the “veterinary” descriptor before the word.

Regardless of company culture, or if one is making an effort to be supportive, calling any of your team members in North America a “nurse” is inappropriate and, in a majority of US states, illegal. To date, title enforcement has been lax, as seen by the flagrant use of “veterinary technician,” “vet tech,” and “tech” being used to describe veterinary assistants.

Once a credentialed veterinary technician has years of experience, many often wonder, what’s next? Numerous certificate and certification programs exist for the veterinary team members, including Fear Free, Human Animal Bond, RECOVER CPR, physical rehabilitation certifications, and so on. However, many of these are offered by private organizations and are typically not regulated or accredited more officially, as we would expect from one of the 23 AVMA-approved specialty veterinary colleges that board certify specialty veterinarians (known as Diplomates).

The State of VTS

There are currently 16 veterinary technician specialty academies, with more on the horizon. These academies mirror the veterinarian specialty colleges and offer certifications that experienced credentialed veterinary technicians can attain. These academies go through an annual review process overseen by the National Association of Veterinary Technicians in America (NAVTA) with recognition from the AVMA. Each academy is required to submit a letter of support from their respective veterinarian specialty college. Individuals that complete the rigorous application process and pass the certifying exam are known as veterinary technician specialists (VTs). Have you never heard of them before? That is not uncommon given that there are fewer than 1,500 VTs worldwide, despite the first academy being founded more than 30 years ago.

How Does One Become a VTS?

That question is best answered by visiting each academy’s website. Generally speaking, candidates must have worked as a credentialed veterinary technician for a minimum of three to five years. The candidate must spend a majority of their time working in the specialty that aligns with the candidate’s interest. For example, if I were interested in obtaining the anesthesia and analgesia VTS, I would need to spend 75% of total work hours in a five-year period to meet the hours required for applying. Most VTS academies define “a majority” of an individual’s time as 70% or greater in the specialty they are applying for, though individual academies’ requirements may vary. NAVTA is creating a searchable database for the profession and the public to verify an individual’s VTS (it will be published on NAVTA’s website: navta.net).

Pay

There are two studies by Norkus et al. (2016) and Gilliam et al. (2020) that found credentialed veterinary technicians with a VTS credential had only nominal increases in hourly pay but did have the potential for greater income with more opportunities to speak, write, or offer consultation services outside of their regular job. Many VTs describe wanting to become a VTS as a personal and professional opportunity for growth while also opening many more doors in their careers.
Veterinary Technician Specialists in Practice

What can a VTS do compared with a non-VTS credentialed veterinary technician? As mentioned, the model of a VTS is similar to a boarded veterinarian specialist. From a legal perspective, there is no difference in allowed tasks—the same as the difference in what a DVM/VMD is legally allowed to do when compared with a diplomate. However, we as a profession have come to respect and rely on specialists for services or knowledge. Specialized veterinarians and veterinary technicians have more standardized advanced training and exposure to more complicated procedures or techniques and often have a broader knowledge base, hence the term “specialist.”

Only a few states thus far, such as Tennessee and California, have acknowledged VTSs in their practice acts. The California veterinary practice act was recently updated and includes title protection for VTSs; the new law says that individuals may refer to themselves as a “veterinary specialist” or “board certified” only if they are a VTS or diplomate.

Despite VTSs not being able to perform additional tasks when compared with a credentialed veterinary technician, hiring a VTS will add value to your hospital. Someone who has gone through the extra steps to become a VTS can help manage more intense or complicated cases, train staff, create protocols, or do anything else that is not prescribing medications, performing surgery, diagnosing a condition, or developing a prognosis. Currently, some states are researching the interest and feasibility of allowing VTSs to do additional veterinary healthcare tasks over and above what their current scope of practice allows.

In a small survey (n=37), an overwhelming majority of veterinarians supported allowing VTSs to prescribe certain noncontrolled medications (with limitations); to perform minimally invasive procedures under indirect supervision (such as simple dental extractions, wound debridement, and suturing); and to induce, maintain, and monitor anesthesia under indirect supervision. If this idea moves forward, it could establish the first real advanced practice veterinary technician (APRVT) role.

This author is aware of some discussion of a “mid-level practitioner” with a few universities interested in creating a master’s degree. While this may be intriguing for some, there has been no corresponding effort to revise or amend state veterinary practice acts to allow these graduates to do anything more than what a veterinary assistant or credentialed veterinary technician can do. There is currently only one university piloting an online program that aims to create this type of role. The mid-level practitioner discussion and nascent programs beg the question of necessity and spark ethical concerns in creating and marketing these programs with little to no return on investment, given the near poverty level wages currently being paid in the veterinary profession. A more practical solution would be to push for VTSs in the advanced practice veterinary technician role instead.

Elevating VTSs’ roles in practice acts would also utilize already established exams and processes instead of needing to create a new exam or application/requirement process. Though, utilizing VTSs as an advanced practice veterinary technicians will require some modification and training if certain areas like limited prescribing powers, minor surgical interventions, and outpatient case management were to become legal.

Stephen Cital, RVT, SRA, RLAT, CVPP, VTS- LAM (Res. Anesthesia), is an educator, author, researcher, and veterinary anesthesia/analgiesa and cannabis expert. Cital works at the Howard Hughes Medical Institute at Stanford University School of Medicine in the Department of Neurobiology. In addition to conducting research, Stephen is an award-winning international lecturer on anesthesia, pain management, cannabis, and best practices.

Despite VTSs not being able to perform additional tasks when compared with a credentialed veterinary technician, hiring a VTS will add value to your hospital.
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2022 AAHA Canine Vaccination Guidelines

A good rule of thumb is, “When in doubt, vaccinate.”

Executive Summary

These guidelines were prepared by a task force of experts convened by the American Animal Hospital Association. This document is intended as a guideline only, not an AAHA standard of care. These guidelines and recommendations should not be construed as dictating an exclusive protocol, course of treatment, or procedure. Variations in practice may be warranted based on the needs of the individual patient, resources, and limitations unique to each individual practice setting. Evidence-based support for specific recommendations has been cited whenever possible and appropriate. Other recommendations are based on practical clinical experience and a consensus of expert opinion. Further research is needed to document some of these recommendations.

Because each case is different, veterinarians must base their decisions on the best available scientific evidence in conjunction with their own knowledge and experience.

This Executive Summary is not a replacement for reading the guidelines in their entirety. The full guidelines are published in the *J Am Anim Hosp Assoc* 2022;58:213–230. DOI 10.5326/JAAHA-MS-Canine Vaccination Guidelines

by Constance Hardesty

Vaccination is a cornerstone of canine preventive healthcare and one of the most cost-effective ways of maintaining a dog’s health, longevity, and quality of life. It serves a public health function by forming a barrier against several...
**zoonotic diseases affecting dogs and humans. And vaccination is an important means of nurturing a long-term veterinarian-client-patient relationship.**

Universal, routine vaccination for high-morbidity or high-mortality diseases such as canine distemper, canine parvovirus enteritis, and rabies is necessary for individual health and to maintain herd immunity, thereby reducing the risk for disease spread and outbreaks. As has been clearly demonstrated, reductions in population-level vaccination rates without eradication of the pathogen inevitably result in outbreaks.

The 2022 AAHA Canine Vaccination Guidelines provide updated vaccination recommendations and dosing schedules for canine vaccines licensed in the United States. The guidelines have been revised from prior versions to provide consolidated and updated clinical information, allowing the veterinarian to select the best vaccines and protocols to fit individual patient needs.

**Overview**

Before presenting specific recommendations, the guidelines provide an overview of canine vaccines, defining and discussing important topics such as vaccine efficacy and effectiveness, causes of vaccine failure, and duration of immunity.

To complete the overview, Table 1 describes key characteristics of the four general categories of canine vaccines based on the physical attributes of the immunizing antigen: attenuated, inactivated, recombinant, and toxoid. (For Table 1, see the guidelines in the *Journal of the American Animal Hospital Association* referenced above, or online at aaha.org/guidelines.)

**Recommendations for Core and Noncore Vaccines**

Based on existing data and Task Force expertise, the Task Force separated vaccines into two categories: core and noncore. Core vaccines are defined by the Task Force as recommended for all dogs irrespective of lifestyle, unless there is a specific medical reason not to vaccinate. Examples of core vaccines include canine distemper virus, canine adenovirus type 2, canine parvovirus type 2, and rabies.

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**At a Glance**

These guidelines update and extend the 2017 AAHA Canine Vaccination Guidelines, providing a current and comprehensive resource for making informed decisions when designing vaccination protocols for dogs. Such protocols promote team commitment, consistent implementation, and effective client education.

Vaccination best practices are based on the individual patient’s history and risk of disease exposure, as well as general herd health considerations. These guidelines empower veterinarians to make the best possible personalized recommendations for their patients by determining which vaccines are essential for each individual dog, by:

- identifying essential vaccines all dogs should have (called core);
- identifying other vaccines based on lifestyle risks that are just as essential as core vaccines (e.g., leptospirosis, Bordetella, and canine influenza vaccines);
- recommending vaccination and revaccination schedules for all vaccines;
- explaining the relevance of vaccine formulations containing modified-live virus, inactivated, and recombinant immunizing agents;
- presenting important information about vaccination for specific antigens;
- addressing factors that can affect vaccine efficacy and effectiveness, including prevaccination immune status and vaccine duration of immunity;
- providing recommendations for vaccinating dogs and puppies presented at or housed in animal shelters, and for responding to an infectious disease outbreak in a shelter setting; and
- addressing factors associated with postvaccination adverse events, vaccine storage and handling; product labeling, and vaccine licensure; and client education and team training.
These recommendations should be considered general rather than universally prescriptive. Veterinarians have the discretion to administer vaccines off-label when scientific data, local circumstances, or evolving standards of care support that decision. In those situations, informed consent from the client is still an important consideration.

The guidelines are to be considered discretionary recommendations. The Task Force emphasizes that practitioners should be aware of the importance of reviewing and following the manufacturer’s label instructions for specific vaccines, including instructions on proper mixing and use of diluents. Different types of vaccines for the same pathogen may induce different immunologic responses depending on vaccine technology, formulation, route of administration, and patient factors.

Vaccination Considerations
To augment the recommendations, a lengthy section of the guidelines discusses key vaccination considerations relevant to various antigens. The discussion is divided into six sections devoted to canine distemper virus (CDV), canine parvovirus (CPV), and canine adenovirus; rabies; leptospirosis; *Borrelia* (Lyme disease); *Bordetella*, canine parainfluenza, and canine influenza; and rattlesnake toxoid. The first five sections discuss the disease(s) caused by the pathogen(s), provide information about the relevant vaccine(s) and why they are categorized as a core or noncore, and state the guidelines’ recommendations for vaccination and revaccination. Detection of antibodies after vaccination and relevant

Noncore vaccines, which are just as essential as core, are recommended for some dogs based on lifestyle, geographic location, and risk of exposure. Canine leptospirosis vaccine, canine Bordetella vaccine, canine Lyme vaccine, canine influenza vaccine, and the Western diamondback rattlesnake toxoid are considered noncore.

The designation of a core vaccine was unanimously supported by all members of the Task Force, but there was not always consensus regarding noncore vaccines. For example, some members of the Task Force asserted that the canine leptospirosis vaccine should be considered a core vaccine based on the increasing geographical prevalence of the disease. However, others preferred to leave this decision up to the veterinarian. For regions where noncore pathogens are endemic, like canine leptospirosis and canine Lyme disease, these vaccines may be considered core vaccines. As travel with pets becomes more popular and vector-borne diseases spread, patients should be carefully assessed at least annually to determine their vaccine requirements.

Table 2 lists core and noncore vaccines as determined by the Task Force and their dosing recommendations. (For Table 2, see the guidelines in the *Journal of the American Animal Hospital Association* referenced above, or online at aaha.org/guidelines.)

Shelters that vaccinate all animals on entry provide optimum herd immunity within their population.
information unique to each vaccine are also addressed. The sixth section, on rattlesnake toxoid, evaluates existing research into its efficacy.

Following are some excerpts from the discussion of key vaccine considerations. These excerpts are a small sample of what the guidelines have to offer. Reading the excerpts is no substitute for reading the guidelines in their entirety.

In the case of canine parvovirus, although host-related factors may play a role, failure to complete primary vaccine schedules or errors in vaccine storage or administration may account for many or most “vaccine failures.”

For rabies, the guidelines note that legal requirements and exemptions may vary by jurisdiction. Veterinarians serving clients in multiple jurisdictions with varying requirements should generally apply the requirements of the jurisdiction where the animal resides.

The Task Force warns that most dogs in North America should be considered at risk for leptospirosis and that vaccination may be necessary to meet requirements for importation and transport of dogs. In addition, the Task Force recommends the use of the 4-serovar vaccines for protection against the most relevant pathogens because vaccines induce only partial or no immunity to heterologous serogroups.

There are four types of approved *Borrelia* vaccines, and the guidelines briefly explain the unusual way in which they exert their protective effect. Vaccination should be complemented with an ectoparasite control program as prevention of tick feeding prevents disease transmission. Predisposition to Lyme nephritis has been suggested for retriever breeds, and this may warrant additional consideration for vaccination for these breeds.

For *Bordetella*, canine parainfluenza, and canine influenza, there may be an immunological benefit in combining different vaccines and routes of administration in a primary series. The guidelines briefly describe and discuss this strategy, called “heterologous prime-boost.”

Finally, for rattlesnake toxoid, the guidelines call attention to the lack of peer-reviewed published data, adding that polyvalent antivenin therapy is an alternative to vaccination when a rattlesnake bite is suspected.

**Shelter Dogs and Puppies**

Animal shelters represent one of the most challenging environments for the prevention and control of canine infectious disease. The guidelines provide a detailed discussion of current recommendations for vaccination of shelter dogs—at presentation, as resident animals, or in case of a disease outbreak. Other high-density or high-risk environments, including foster homes, foster-based rescues, breeding facilities, sanctuaries, boarding kennels, and pet stores, should consider following the same vaccination protocol.

Shelters that vaccinate all animals on entry provide optimum herd immunity within their population. Conversely, shelters that do not vaccinate on entry or do not vaccinate all dogs are at higher risk for an infectious disease outbreak.

Serological testing can help to manage disease outbreaks, particularly in the case of CDV and CPV, as opposed to depopulation or prolonged lockdown of the shelter.

**Serologic Titors**

Recognizing the limitations of existing research, no values for “protective titers” are indicated in these guidelines, although some commercial laboratories provide them. Altogether, routine titer testing to ascertain the necessity to revaccinate at currently recommended intervals is not usually advised, except in cases in which dogs have a history of adverse responses to vaccination, or there is a suspicion of vaccine-related autoimmune disease, or when owners hesitate or resist—in which case client communication and education may be warranted.

**Postvaccination Adverse Events and Reactions**

Undesired or unexpected consequences after vaccination include failure to provide protection from disease and adverse reactions associated with vaccine administration. Failure to provide protective immunity is primarily of concern in very young or very old dogs. Adverse reactions may be due to a number of causes, ranging from inappropriate administration...
Most dogs in North America should be considered at risk for leptospirosis.

of a modified-live product to genetic predisposition. Localized cell-mediated immune reactions or generalized systemic responses can occur after vaccination. Type I hypersensitivity reactions have been linked to vaccination, but vaccine associations with other immune-mediated diseases are less consistent. This may indicate that factors besides vaccine antigens are responsible for immune disease sequelae following vaccination.

Other topics addressed in this section include reducing the number of vaccines administered at a single office visit, whether to treat at-risk patients with diphenhydramine before vaccination, the importance of informed consent, and reporting adverse events.

The guidelines warn that reducing the administered volume of any vaccine below the manufacturer’s recommended volume (“split dosing”) is not advised. Doing so may result in legal liability.

Storage and Handling, Labels, and Licensure
Vaccine effectiveness relies on proper storage and handling. The guidelines provide recommendations for keeping vaccines in a temperature-controlled environment from the time they leave the manufacturer to the time of their administration. The guidelines also recommend use of new, sterile syringes and needles for administering vaccines and warn that delays in vaccine reconstitution and administration can decrease vaccine efficacy.

Vaccine labels have recently undergone considerable changes; veterinarians are encouraged to review individual manufacturer efficacy and safety data online. Licensure standards for fully licensed products are similar in the United States and Canada.

Client Education, Team Training
A well-defined vaccination protocol with consistent messaging provides a framework for the veterinary team. At minimum, a vaccination schedule should consist of anatomical location of vaccine administration, route of administration, age requirements and/or restrictions, and frequency of administration. A vaccination protocol should be created with the patient’s needs and lifestyle in mind, with buy-in from the client. Wellness plans often include recommended vaccines and help the healthcare team deliver a consistent message. Each practice should consider creating a source of client education materials, discharge instructions for practice teams, and brief statements about each vaccine and the disease(s) it prevents.

To counter hesitancy and skepticism, client education can play a key role by helping pet owners understand that vaccination is a safe, effective, and necessary part of their pet’s healthcare plan and that it acts as a barrier to zoonotic diseases. All members of the veterinary team should be able to communicate a consistent message about the importance of immunization. Protocols for baseline and individualized vaccination plans are useful tools not only for implementing vaccination practices but also for client education.

Licensed canine vaccines have a high degree of proven safety and efficacy. A good rule of thumb is, “When in doubt, vaccinate.”

Constance Hardesty is an award-winning freelance writer living in Colorado. She is the former editor in chief of AAHA.
These guidelines are generously supported by Boehringer Ingelheim Animal Health, Merck Animal Health, Zoetis Petcare, and Elanco Animal Health.
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Understanding Suture Materials

by Heidi Reuss-Lamky, LVT, VTS (Anesthesia and Analgesia), (Surgery), Elite FFCP (Veterinary), CFVP

Suture selection is a crucial and integral factor to ensuring successful surgical outcomes. Suture material choices must be based on the anticipated wound healing times and tissue types as well as considerations unique to each patient (e.g., age, weight, overall health status, presence of infection). Since many sutures are subject to absorption, encapsulation, or rejection, using the wrong suture type may lead to unintended consequences such as wound dehiscence or the development of draining fistulous tracts. Veterinary technicians well versed in suture types and selection criteria will be more adept at anticipating the needs of the surgeon.

What Is a Suture?
The word suture is used to describe strands of material used to ligate (tie off) blood vessels or approximate tissues during wound closure. Written Egyptian and Syrian references describing the use of strings and animal sinew as sutures have been discovered as far back as 2000 BC. Throughout history, the evolution of suturing materials for operative procedures have included the use of silk, linen, cotton, horsehair, animal tendons and intestines, and wire made from precious metals. In fact, some of these materials, as well as some of the surgical methods used by the Roman emperors’ physicians, are still in
use today. Modern advancements include the development of easy-to-use sutures designed for specific surgical procedures that can also help decrease the potential for postoperative infections.

**Ideal Suture Characteristics**

General suture performance may be divided into three areas: 1) physical characteristics, 2) handling characteristics, and 3) biological properties. Consequently, the perfect suture would be made of strong, inert materials that resisted shrinking and breaking until completely serving its purpose. It would also have minimal “memory” properties, thereby rendering the suture easy to handle while maintaining good knot security. The perfect suture would also be nontoxic, nonelectrolytic, noncapillary, nonallergenic, and noncarcinogenic and avoid bacterial growth.

Other beneficial properties of the ideal suture would employ the use of readily available and inexpensive materials, ability to withstand the sterilization process without alteration, and would be manufactured securely attached to strong, sharp needles that easily and rapidly penetrate tissues.

**Suture Material Overview**

The US Food and Drug Administration (FDA) categorize suture material as a class II medical device. Class II and III medical devices encompass surgically implanted materials that remain as a foreign body inside the patient’s body upon discharge.

Sutures are sized based on metric or United States Pharmacopeia (USP) measurements. Established in 1937, the USP classification system was developed to standardize and compare suture material sizes. Metric sizes are determined by taking the suture diameter as expressed in tenths of a millimeter, while USP sizes can range from 11-0 (ought) to 7 (largest). Stainless steel wire is sized according to the Brown and Sharpe (B and S) wire gauge measurements and can range from large, 18-gauge (~USP 7), to the smallest, 41-gauge (~USP 7-0).

Selecting the appropriate suture size can minimize tissue reaction and the presence of excessive foreign material as well as prevent alteration of tissue architecture. Optimal suture size is determined as the smallest size necessary to achieve a tension-free wound closure. However, if wound tension is high, smaller-diameter sutures may actually damage tissues by cutting through them. Therefore, it is prudent to closely match the tensile strength of the suture with the tissue in which it is being used.

Sutures are classified by the number of strands they are composed of. Monofilament sutures are made of a single strand of material, whereas multifilament sutures consist of several filaments (strands) that are spun, twisted, or braided together. The simple structure of monofilament suture decreases resistance when passed through tissues and resists harboring organisms but is at an increased risk of damage when tied, crimped, or crushed. Multifilament sutures have greater tensile strength, pliability, and flexibility but cause more tissue drag and provide increased surface area for microorganisms to adhere. Sutures may be coated with agents to improve handling properties.
or colored with an FDA-approved dye to enhance visibility.

Sutures are also classified as either absorbable or nonabsorbable. Absorbable sutures undergo degradation and rapid loss of tensile strength in less than 60 days. Absorbable sutures may be classified as natural fiber absorbable (e.g., catgut, collagen) or synthetic absorbable polymers (e.g., polyglycolic acid suture, polyglactin 910, polydioxanone, polyglyconate, and poliglecaprone). Furthermore, some synthetic absorbable sutures may be subclassified as active sutures based on their ability to inhibit bacterial growth. Nonabsorbable sutures will maintain tensile strength for more than 60 days.

**Absorbable suture:** Natural fiber absorbable sutures are essentially digested by the body’s enzymes, whereas synthetic absorbable sutures are broken down by hydrolyzation. Hydrolyzation is a process by which water gradually penetrates the suture filaments, thereby causing a breakdown of the suture’s polymer chain. Hydrolyzation causes less tissue reaction as compared with enzymatic destruction.

Although there are many advantages of using absorbable sutures, it should be noted that the absorption process can become altered in patients with a fever, infection, or protein deficiency, resulting in an accelerated decline of tensile strength. Furthermore, the absorption process can begin prematurely if the sutures are placed in a moist or fluid-filled part of the body or if the material becomes wet or moist during handling or any other time prior to implantation.

Active sutures are another relatively new option in absorbable suture materials (e.g., Polyglactin 910-, Poliglecaprone 25-, Polydioxanone-Plus Antibacterial). Active suture materials are impregnated with a broad-spectrum antibacterial agent such as Irgacare MPTM (triclosan) at concentrations less than 472 µg/m. This agent has been shown to inhibit bacterial colonization of microorganisms along the suture line (e.g., *Staphylococcus aureus*, *Staphylococcus epidermidis*, methicillin-resistant *S. aureus*, methicillin-resistant *S. epidermidis*, and *E. coli*) while eliciting minimal tissue reaction during absorption.

**Nonabsorbable suture:**
Nonabsorbable natural fiber materials include stainless steel, silk, and cotton, whereas nonabsorbable synthetic materials may include nylon, polyester, and polyolefin plastics (e.g., polypropylene, polyethylene.) The USP classification of nonabsorbable sutures is:

- **Class I:** Silk or synthetic fibers of monofilament, twisted, or braided construction
- **Class II:** Cotton or linen fibers or coated natural or synthetic fibers in which the coating contributes to suture thickness without adding strength
- **Class III:** Metal wire of monofilament or multifilament construction

The most common indications for nonabsorbable sutures include transient exterior skin closure, patient history of reaction to absorbable sutures (e.g., keloidal tendencies, tissue hypertrophy), permanent use within the body cavity where suture eventually becomes encapsulated in tissue by fibroblasts, or during prosthesis attachment (pacemakers, drug delivery systems.)
Absorbable Suture Materials—Monofilament

Poliglecaprone 25 (Monocryl): Synthetic material prepared from a copolymer of glycolide and epsilon-caprolactone. Recommended for ligation or tissue approximation during general soft tissue, oral and urinary bladder surgery, and for subcutaneous closures. Not recommended for use in cardiovascular, neurologic, microvascular, or ophthalmic surgery.

Glycomer 631 (Biosyn): The strongest monofilament suture in this class, second only to stainless steel. Sixty percent loss of tensile strength at 21 days, with complete absorption by 90–110 days. Dyed (violet) and undyed versions available. Good handling characteristics with low memory and little tissue drag, but tying secure knots requires a good technique.

Polydioxanone (PDS, PDS II): Synthetic paradioxanone (p-diaxanone) polymer available in dyed (violet) or undyed versions. Slow and predictable absorption rate is essentially complete at 180 days (6 months). Acceptable to use for abdominal or thoracic wall closure or in the bladder tissue of sterile or infected canine urine. Rarely associated with calcinosis circumscripta in young dogs.

Polyglyconate (Maxon): Monofilament absorbable with properties similar to PDS. Superior effective strength after implantation with absorption complete at 6 months, which is not affected by the presence of infection or inflammation. Versatile material recommended over nylon and polybutester for tendon repair. Ends can be sharp if cut too short.

Polyglycolic Acid, +/- Polycaprolate coating (Dexon, Dexon II): Synthetic braided material made from polyester polymerized from hydroxyacetic acid. Suitable for use during intestinal anastomosis, caesarean section, and hernia repair as long as extended approximation of tissues under stress is not required. Tolerated in the presence of infected wounds. Avoid use in the oral cavity or urinary bladder, especially in the presence of an alkaline pH.

Polyglactin 910 (Vicryl Plus, Vicryl, Vicryl Rapide): Synthetic braided material composed of a 9:1 ratio of glycolic and lactic acids. Well tolerated in many wound conditions. Avoid prolonged contact with salt solutions, such as those found in the urinary or biliary tract.

Lactomer 9-1 (Polysorb): Lactomer 9-1 has very similar characteristics to polyglactin 910, but a finer filament diameter, which results in a very compliant strand with less memory than other synthetic absorbable multifilaments. May cause calculi when used in urinary or gall bladder tissues. Avoid in cardiovascular or neurologic surgery.

Nonabsorbable Suture Materials

Surgical silk (Mersilk, Perma-Hand): Composed of raw silk spun by silkworms. May be coated with beeswax, oil, or silicone to decrease capillarity. Superior handling characteristics make this material considered the standard of performance by many surgeons. Used in vascular surgery (PDA) or for skin sutures. May cause ulceration when used in hollow viscera (e.g., gastrointestinal tract) or predispose to calculi formation in the urinary or biliary tract. Potentiates wound infection x 103–104.
Polybutester (Novafil): Synthetic monofilament suture is made from a copolymer of polyglycol terephthalate and polyglycol terephthalate. Suture exhibits superior elasticity as compared with other materials but returns to its original length once the load is removed. Elastic properties, good tensile strength, and knotting characteristics make it suitable for surface closure, repair of tissues such as tendons, or when prolonged wound healing is expected.

Polyester fiber (Mersilene/Surgidac, Dacron, [uncoated] and Ethibond/Ticon, Ethiflex [coated]): Multifilament braided material comes coated with polybutylate (Ethibond), Teflon (Ethiflex), or silicone (Ticon) to reduce friction and improve pliability. Lasts indefinitely in the body. Can be used in slow-healing tissues, in vessel anastomosis, and during placement of prosthetic materials. Avoid in infected wounds where bacteria entrapped between fibers can cause persistent incisional drainage.

Nylon/Polyamide (Ethilon, Monosof, Nurolon, Dermalon, Bralon, Surgilon): Monofilament (e.g., Ethilon, Monosof) and braided (e.g., Nurolon, Surgilon) polyamide polymer suture. Braided forms coated with silicone. Stronger than silk and elicits minimal acute inflammatory reaction. Maintains elasticity after implantation, even when moist. Inert and noncapillary. Supramid, a twisted multifilament suture, is available in large diameters only.

Polymerized caprolactam (Supramid, Vetafil): Synthetic multifilament material. Similar to nylon, composed of a polyamide polymer but has a smooth sheath of polyethylene/proteinaceous material. Elasticity properties permit use in areas subject to movement or tension. Not sterile, so few indications other than skin closure. Causes subcutaneous swelling and sinuses.

Polypropylene (Prolene, Surgipro, Surgilene): Synthetic monofilament suture consists of a stereoisomer of polypropylene. Remains biologically inert. May be used as a pull-out suture (e.g., subcuticular or skin closure) because it does not adhere to tissues. Often used in vascular surgery owing to being the least thrombogenic. Also good for use during hernia and tendon repair and in contaminated or infected wounds.

Stainless steel (Flexon): Composed of monofilament or twisted multifilament iron-chromium-nickel-molybdenum alloy but also manufactured without toxic elements. Demonstrates excellent knot holding capabilities and high tensile strength with little loss over time and is biologically inert. Used in orthopedic, neurosurgical, and thoracic (e.g., sternum closure) applications as well as for abdominal wall closure or in contaminated or infected wounds. Visible radiographically but may interfere with magnetic resonance imaging and requires special cutting scissors.

Further Reading

Ethicon, Inc. Ethicon Product Catalog Sutures, Topical Skin Adhesives, Surgical Mesh. 2007.


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What Is the Best Anesthesia Monitor?

Monitoring of all parameters during the anesthetic period is critical to prevention and early recognition of potentially lethal complications.

Answer: Technology and Training Working Together

by Tasha Mc Nerney CVT, CVPP, VTS (Anesthesia and Analgesia)

Wandering around the exhibit hall of any major veterinary conference, you may see a variety of colorful machines promising to make anesthesia safer for your patients. Often clinicians and practice owners will ask themselves: “Which anesthesia monitor is the best investment for my clinic?”

This question is a difficult one to answer. First, how many patients are you anesthetizing? What type of procedures are you preforming? What types of patients are you usually seeing (young and healthy or older with concurrent disease)? There are a bevy of available anesthesia multiparameter monitors on the market, but not one of them is a match for a well-trained veterinary technician whose sole purpose is to monitor anesthetic trends of each patient.

Compared with human medicine and surgery, veterinary medicine has a much higher mortality rate. Risk factors associated with anesthetic deaths in veterinary medicine include increased age, patients with higher ASA status (sicker patients), patients that are overweight, procedures performed during emergency hours with less staff, and accidental endotracheal intubation in cats. All these factors and more contribute to the increased anesthetic mortality rate—0.17% in dogs, 0.25% in cats, and 1.4% in rabbits as noted by several studies.

Justina Bailey, a surgery team member at Philadelphia Animal Specialty and Emergency, monitors a patient under anesthesia.

Photo courtesy of Tasha Mc Nerney
in veterinary medicine. One way to start decreasing anesthetic mortality in veterinary patients and providing safer anesthetics for our pets is to refer higher-risk cases such as the ones listed above to centers with an anesthesiologist and/or veterinary technician specialists in anesthesia. Another avenue is to use trained veterinary staff to educate clients on the risks and expectations associated with anesthesia.

**The Human Factor**

First, let’s focus on what a trained anesthesia technician armed with nothing but a stethoscope and their visual senses can bring to the table. Anesthesia technicians often perform client and patient intake exams prior to the surgical procedure and before medication. During this initial intake examination, technicians can obtain vital information that may have a bearing on anesthetic or sedation drug selection.

Palpation of the peripheral pulses is simple and inexpensive and can provide a wealth of information about heart rate and rhythm as well as pulse quality. When checking the patient’s mucous membranes, we can determine hydration or perfusion estimates. If a patient presents with muddy, pale, or even blueish mucous membranes, we become concerned about decreased oxygenation, the clinician is alerted, and more diagnostics can be obtained before anesthesia is administered.

By listening to the heart and lung fields, veterinary technicians can become aware of cardiovascular findings such as a heart murmur, an area of decreased sound, or “crackling” lung sounds. If detected before anesthesia, the attending clinician can be alerted to prevent elective anesthesia on a patient and avert serious complications.

I have personally had one patient come in for an ovariohysterectomy only to have a muffled chest auscultation postpone the surgery. We obtained radiographs of the patient, and it turned out she had a diaphragmatic hernia and was sent to a specialist for surgical correction and advanced anesthesia care.

**Machines**

When it comes to multiparameter monitors, most often clinicians are using ones that are able to measure the following values: oxygen saturation (SpO₂%), end-tidal carbon dioxide (ETCO₂), heart rhythm and electrical activity via electrocardiogram (ECG), respiration rate, temperature, and blood pressure.

Monitoring of all parameters during the anesthetic period is critical to prevention and early recognition of potentially lethal complications. Multiparameter monitors that include special algorithms for measuring ECG in animals are more capable because they are adjusted for the animal’s QRS complex, which differs significantly from the human QRS complex. Some of these monitors have increased trace sweep speeds, adding an additional tool for diagnosing abnormal ECGs in high-heart-rate animals such as rabbits or ferrets. Other parameters such as blood pressure monitoring are essential to ensure adequate blood flow to the kidneys and liver during the procedure.

**The Importance of Capnography**

A special note on ETCO₂ monitoring: Most multiparameter monitors will have this as part of the package; however, stand-alone units for capnography are available as well (products such as the EMMA from Massimo or the AirMate from Sentier).

Waveform capnography represents the amount of carbon dioxide (CO₂) during exhalation, which assesses ventilation. It consists of a number and a graph. The number represents a numerical capnometry value, which is the partial pressure of CO₂ detected at the end of exhalation. The capnograph is the waveform that shows how much CO₂ is present at each phase of the respiratory cycle, and it normally has a rectangular shape. This monitoring parameter in particular gives an additional level of safety as it will not only directly tell you about the patient’s ventilation status and breathing system but also
indirectly clue you in to the patient’s cardiovascular status (cardiac output).

In fact, in a closed claim study, anesthesiologists who reviewed 1,175 anesthetic-related closed malpractice claims found capnography and pulse oximetry could have potentially prevented 93% of avoidable anesthetic mishaps.

Capnography is useful for troubleshooting anesthesia machine mishaps such as an exhausted carbon dioxide absorber, malfunctioning unidirectional valves, increasing dead space, kinked endotracheal tubes, and other equipment mistakes.

Immediate and effective response to complications during anesthesia is critical, and for additional training resources, the 2020 AAHA Anesthesia and Monitoring Guidelines for Dogs and Cats has a page dedicated to troubleshooting anesthetic complications such as hypotension, hypothermia, and hypoventilation.

The recovery period is another example where multiparameter monitors can aid the veterinary team in the prevention or detection of problematic events. According to AAHA’s anesthesia guidelines, there are several studies that point to recovery from anesthesia and the postoperative period as especially critical, with evidence of high mortality rates cited. AAHA does indicate that “increased monitoring and early diagnosis of physiologic changes and earlier intervention may reduce the risk of anesthetic death.”

The Future of Anesthesia
Looking into the future of anesthesia, there are some artificial intelligences already at work in the operating room. Pharmacological robots include the “McSleepy,” a machine that delivers IV sedation drugs such as propofol, narcotics, and muscle relaxants based on anesthesia team input. There is also the iControl-RP machine, described in The Washington Post as “a closed-loop system intravenous anesthetic delivery system which makes its own decisions regarding the IV administration of remifentanil and propofol based on continuous patient data.” This device monitors the patient’s EEG level of consciousness via a BIS monitor device as well as traditional vital signs. One of the machine’s developers, Mark Ansermino, MD, stated, “We are convinced the machine can do better than human anesthesiologists.”

While this seems far off for the foreseeable future in vet med, it only highlights the importance of a trained professional paired with technology. Most of the subjective determination of patient status is taken out of the equation with multiparameter monitoring systems or, allowing for more objective determination of patient status, as many of the parameters are continuous, with real-time reports of cardiopulmonary function (with ECG and ETCO₂). The continuous and trending information from a multiparameter monitor together with a trained technician continuously assessing the patient’s physical parameters during surgery will provide the safest outcomes for our patients as possible.

When it comes to training staff on anesthesia monitoring, AAHA’s 2020 Anesthesia Guidelines for Dogs and Cats is a great resource. The website offers everything from an easy-to-use veterinary anesthesia monitoring form to a team anesthesia training checklist (downloadable PDF), preanesthesia client questionnaire, and much more to help your team become confident and successful during the anesthetic process. ⋆

Further Reading


Frankel TC. “We are convinced the machine can do better than human anesthesiologists.” The Washington Post. May 15, 2015.


Tasha Mcinerney, CVT, CVPP, VTS (Anesthesia and Analgesia), is a certified veterinary technician from Glenside, Pennsylvania. She is also a certified veterinary pain practitioner and works closely with the NAPM to educate the public about animal pain awareness. Mcinerney has authored numerous articles on anesthesia and analgesia topics for veterinary professionals and pet owners.
We care about the veterinary profession, about excellent medicine, and about you. We care about high standards of care and service, constant growth and improvement, and veterinary professional wellbeing. We care about attracting the best and brightest into the profession, providing the resources you and your team need, and nurturing the unique community you have created for one another.

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Almost anyone who has spent any time in a busy practice would agree that veterinary technicians aren’t afraid of hard work. So why is it so hard to find and keep technicians?

In a conversation made possible with support from CareCredit, Tasha McNerney, BS, CVT, CVPP, VTS (Anesthesia and Analgesia), offered her thoughts on the ways our people and our practices thrive when we stop underestimating and underutilizing our credentialed technicians—and gives advice for techs struggling to speak up for themselves and their considerable skills and education.

Katie Berlin: You’ve done a lot of teaching about pain, and, as a technician specialist, you have a lot of qualifications and experience. But do you find that people approach you differently or are sometimes less receptive because you’re a technician?

Tasha McNerney: I will say that it depends on the culture of the practice that I go into. I don’t have a problem being a little bit intimidating for good patient care, especially when it comes to pain management and analgesia. My job is to advocate for that patient if I see that that patient is suffering, stressed, and so on.

Some technicians are working in clinics where the technicians do not feel that they can go to the clinician or even offer a disagreement. I’m not talking about going up to your clinician and saying, “Hey, you gave this dog this and that’s wrong.” Of
course, how we approach things is going to help our cause.

But at the same time, you need a culture within your practice [where] if a kennel technician is feeding the animal and notices they didn’t eat two of their meals, I want that kennel technician to feel like they can come to me and say, “Hey, I think the drugs this patient is on are making them nauseous. They don’t want to eat. What can we do about it?” I want everyone in that clinic who is spending time with that animal to feel like they have ownership in the management of that case and can go to the clinician with these concerns and have a conversation. We have to take the ego out of it.

To make and instill change, it really has to come from the top, where the management of the hospital and the clinicians are in agreement that this is where we want to go. We want to have the best pain management protocols and have everyone involved, and we want everybody to be proud of our patient care and our pain management.

Ultimately, you can make little changes here and there, but if you don’t have buy-in from the very top, it is going to be an uphill battle, and probably very frustrating.

**KB:** Every vet clinic I know is having trouble hiring and retaining staff members, and I have to think this is something you see as related to that. Would that be fair to say?

**TM:** One hundred percent. We have a lot of information out there to tell us, especially when it comes to technicians and assistants—it is not all about money. Technicians, especially certified veterinary technicians who went through an accredited program, who put the work in and put the time in and they want this to be their career, they want to use those skills. They want to be really fully utilized.

I stayed at [one general practice] for 15 years. I stayed after I got my CVPP, after I became a VTS. I stayed there because I was so fully utilized, and I got to use my brain and my skills so much every day. I was never bored, and I think that that practice still today does not have a very high turnover. This practice has figured out that if they really fully utilize the technicians, not only do the technicians enjoy their work, but also it makes it better overall for patient care. The overall practice efficiency is better, which means, guess what? The overall practice profitability and Yelp reviews are better.

I think part of it is some of the veterinarians don’t understand all that a certified veterinary technician can bring to the table. [Everyone who] went through vet school worked with really badass techs who just ran everything. If you had a difficult intubation, they were there to help you with it. Technicians have these really advanced skills that you could be utilizing in your general practice.

I worked with a clinician who saw that I was interested in anesthesia, and he said, “Hey, I see you have an interest in anesthesia. Would you want to be our technician point person for that?” And he sent me to anesthesia CE, and that really got me going in anesthesia and surgery and pain management and all of that. It was just having that mentor and having somebody say, “Hey, I see you’re interested in this. How can we help you flourish within
that, and bring it, and make it even better at the practice?"

That kind of stuff is huge for technicians. They want to be fully utilized, and most of the time when technicians leave practice, it is because they are feeling stagnant. They’re feeling like they’re not learning anything. They don’t have any place to advance in their career. So not only is it going to be in the best interest of the practice [to utilize your techs] and you’re going to retain your technicians even longer, but the patient care efficiency and ultimately profitability is going to go up for your clinic. Utilize your technicians to the fullest extent.

**KB:** I know I’ve been guilty as a vet of feeling like I didn’t want to burden them with these things and saying, “Well, okay, I know I’m getting paid more than they are, and I can stay late and do my records. I’m going to get this done so that they don’t have to worry about it.” And working at a hospital with . . . I think we had 13 CVTs? It was insane how much could get done without me even there. And they could do it faster and better, and I could get my charts done.

They really thrived on being able to use those skills that they worked so hard to get, and I realized how much I had been laboring under that false belief in my mind that I was sort of foisting my work off on other people, when, in fact, it wasn’t my work. It was their work, and I’d just been doing it this whole time.

**TM:** Yes, yes. Let us do our jobs. Man, we want to utilize the skills that we have worked really hard for. And I think some of it may come down to simply that some clinicians don’t know exactly what a technician can [legally] do. So look into some of the practice laws or practice acts in your state because every state is a little bit different.

In Pennsylvania, once my clinician felt like he had seen enough to know I was capable, if we had a simple laceration repair or a urethral obstruction cat, we went over the anesthetic plan, we went over the estimate. Once everything was signed off, the patient pretty much got turned over to me as the technician.

So it was me as a technician and an assistant. We would sedate the patient. I would do the unblocking of the cat or the simple laceration repair. Think about it from the clinician’s perspective: He comes in, checks over everything, hands it over to me, the assistant and myself are doing it, monitoring the anesthesia, performing the tasks. And then when the patient is starting to recover, he comes in, does another exam, I’m the one writing up the discharge instructions, the assistant and I are filling the medications to go home and communicating with the client, and then at discharge, my clinician is talking with the client. So it really is a team effort. The clinician cannot and should not be doing everything.

**KB:** That is a disease, I think, that a lot of us have. We feel like we have to do everything and be everywhere, and then we get burned out and tired but we are taking all of that on ourselves.

Let’s use pain management as an example. Can you talk about how you would recommend a hospital use, say, somebody from the front office team and somebody from the technician team to sort of bolster that workflow and change it up a little bit, so that the whole team is involved?

**TM:** Yeah. I think it’s really important to have the whole team involved. One person can’t be the pain police for the entire practice and have a hand on every single patient that comes in. Just put it out there to your staff. “Hey, who’s interested in pain management? I want one technician representative, I want one kennel attendant representative, I want one clinician, and I want you to form a little task force on pain management.” This could be the practice manager talking, or the medical director. “I want you to talk about what do you think about instituting the Colorado State pain scoring here. How can we get everybody on board with that?”

And if everybody has a seat at that table to make the decisions, the buy-in is going to be greater.

We don’t want to just have these four task members, and then everybody else in the dark. You’re going to say, “Hey, at the staff meeting, the Pain Management Task Force is going to talk about some of the new things that we’re going to be rolling out. And we need your help with it. So if you have any ideas, let us know. Or if you want to try the Glasgow short form pain scoring instead of the Colorado, let’s talk about it as a group.”

[That way] they feel like they have some ownership in it. I think it doesn’t work if it’s just a memo from the medical director saying, “Hey, we’re going to start instituting pain scoring. Here’s a link to the pain score. We want you to do it.”
KB: I want to switch it up and think about what it would be like if you’re a CVT or an RVT or LVT and you’re in a practice where you feel you’re not utilized. You feel like your skills aren’t being used and you’re not being challenged. This is really a crucial conversation, the need to have a difficult conversation with somebody in management about what you’re not happy with at your job.

What can somebody like that do tomorrow to try to start investigating whether that situation can be changed and made better?

TM: I hear this a lot from technicians. They write to me or we talk in a practice, and they have asked if they could start doing CRIs or local blocks, and they kind of got shut down. And guess what? This job market right now—they’re looking elsewhere. They’re going to find some place that’s going to let them do those epidurals, or let them work on their VTS, or really foster their growth.

If your practice isn’t fostering growth, you’re going to be losing technicians. I don’t ever tell technicians, “Go in guns blazing and just quit your job.” Everybody in the practice has good intentions. I think the intent is good. Oftentimes, the execution is not. And that’s because sometimes management just doesn’t have the training tools.

If you have to go talk to management about something, [think about] whether you want to be thought of as nice or if you want to be kind. [There can be better outcomes] if we can get away from just being nice for the sake of being nice, saying what the other person wants to hear, and instead be kind. The kind thing for me as a technician is to go to my superior and say, “Hey, I’m not being utilized and I really want to do this with my career, and if that’s something that this practice cannot do, I totally understand, but I’m probably going to look elsewhere.”

That is a kind conversation to have. The “nice” thing to say would be, like, “Oh yeah, everything’s great,” and then the next day I give my notice. We don’t want that. We want people to say, “Hey, this is what’s happening. How can we fix it? And if we can’t fix it, maybe this isn’t the place for me.”

If I want to be further utilized, I have to advocate for myself and say, “Hey, I’ve had this training. I’ve done an epidural before. Let me try it with you and maybe we can work on it.” And if they’re really resistant to it and you’re not getting anywhere. . . . I never encourage people to quit their job, but at the same time, if you really aren’t being fulfilled, and that work doesn’t light you up in the same way you did when you were graduating tech school or vet school, find work that does.

KB: So have that difficult conversation, because you never know what’s going to come out of it, but don’t be afraid to look for a better situation if the one you’re in doesn’t seem like it’s going to change. It does seem fair to give that situation a chance, especially if you like other aspects of where you are. It never hurts to ask, especially if you do it in a clear and not accusing way.

TM: One hundred percent. This is not just a technician issue. It is about working together with the management or the hospital administrators to not only have a fulfilling workday, but also provide the level of patient care that you want to provide. You’re not going to go home at the end of every day thinking, “Oh my gosh, sunshine, sparkles, rainbows. This is the best.” But the majority of your days should be like that, and if the majority of your days are not lighting you up and you’re not proud of the work that you do and excited about it, then, yeah, I think you have to have a conversation with your management, and if it’s not going to be the place for you, that’s okay. Right? That’s okay. It is what it is, and if you have to move on, move on in the best way possible. ❗️

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Tasha McNerney, BS, CVT, CVPP, VTS (Anesthesia and Analgesia), is a certified veterinary technician from Glenside, Pennsylvania. She is also a certified veterinary pain practitioner and works closely with the IVAPM to educate the public about animal pain awareness. McNerney has authored numerous articles on anesthesia and analgesia topics for veterinary professionals and pet owners.

Katie Berlin, DVM, CVA, is AAHA’s Veterinary Content Strategist.
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Sandy Allen

Lead Receptionist
PetStar Animal Care, Ruston, Louisiana

Year started in vet medicine: 2013
Years with practice: 9
Nominated by: Danielle Emanuel, Practice Manager

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She goes above and beyond by always covering shifts, helping when needed, staying late, caring for everyone.

In Their Own Words
Why do you love your job: There is something new every day and lots to learn. I enjoy getting to know the customers and building new relationships. I also enjoy working with my coworkers.

Pets at home: I have 3 pets at home. Milkshake and Hiccup are my cats and our newest addition is our dog Wren. All 3 are rescues!

What brought you to the profession: I have always had a love and compassion for animals. I have developed a whole new respect for this profession and what all it involves over the years.

Hobbies outside of work: House cleaning? I am a home body. If I am not out having lunch with my friend, I’m usually at home.

Favorite book/TV show: I love watching anything involving murders or murder investigations. I usually only watch ones that are based on true stories.

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